

TRADITIONAL VETERINARY MEDICINE IN INDONESIA



FAO/APHCA PUBLICATION

NO. 11

FAO Regional Office for Asia and the Pacific, Bangkok, Thailand
1991

**TRADITIONAL VETERINARY MEDICINE
IN
INDONESIA**

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FOREWORD

This is one of the new FAO/APHCA publication series on Traditional Veterinary Medicine in Asian countries. The earlier series on the same subject was brought out between 1984 and 1986 and covered such countries as India, Nepal, Pakistan and Thailand.

Animal health is a major concern for the small farmers of most Asian countries. In general, animal health and nutritional status are rather very poor in these countries. A large population of unproductive animals along with lack of pasture grazing land have compounded the problems facing the basic animal health care delivery system.

Ever since the human life started in this earth, disease and death co-existed with him and with his animals. Therefore, efforts have been made to get relief out of it using herbs in various forms as a medicine from the very beginning of the human civilization. From the time immemorial, the traditional system of medicine was being practiced in the Region. Most of the traditional practitioners are not trained and the practices which came down from generation to generation had, in fact, become a culture in socio-economic life of the people in countries of the Region.

Traditional veterinary medicines are the least expensive, can be locally prepared and traditionally rooted in the lifestyle of the people. It should be decided to support them so that some positive steps be taken up into an integrated approach with other modern veterinary services.

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TRADITIONAL VETERINARY MEDICINE IN INDONESIA

I, INTROD UCTION

Survival of the fittest is the law of the nature, in which only the strong one has the chance to survive in the nature. But the nature also gives us all our need to live healthy. In nature, animal tends to find his own remedy whenever something wrong happened with his health from what available in the nature. It was known that cat is very fond of kind of a root of lalatang plant (*Acalypha indica* Linn.) for his tonic. There is always a tendency for an overfed dog to eat a kind of grass (*Cyperus rotundus* Linn.) to be able to vomit. The people has learnt these phenomena which were the beginning of the usage of herb for traditional medicine.

For centuries the Indonesian people used to treat their ailment/diseases with the combination of herb (a mixture of leaves, roots, flowers, fruits, etc.), sometimes mixed with raw egg, honey or other substances. It was reported that the practice had been used since 300 years ago. The knowledge of the remedial mixture was inherited from generation to generation. Sometimes it was kept secret by certain families. But mostly the knowledge was kept by the traditional healer or traditional doctor who passed it on to their children or pupils only. Since Indonesia consists of more than 100 tribes, there are many recipes of traditional medicine. In many occasion, it was mixed with mysticism or magic. During that period, the traditional medicine was the only system practised among the people. The situation was changed with the coming of the western people in Indonesia in the 15th century. They brought along western medical knowledge. Realizing that the traditional medicine also based on. the usage of certain plants, many scientists/botanists tried to analyse some of the plants used in the traditional medicine. However, the written report on the finding was just published in the beginning of the middle of the 17th century, first by Jacobus Bontius (1592 - 1631) which were afterward followed by other publications. Research on this direction was hastened when Bogor Botanical Garden was built in 1817.

Although nowadays the western medical systems have been practised throughout Indonesia, even they could be found in the remote places, a majority of the people, especially in the rural areas still use and practise the traditional medicine which is called "jamu". It consists of a mixture of different herbs and substances to be drunk with bitter taste for tonic, beauty care and special treatment for headache, fever to chronic diseases. It also could be found as plaster used topically on the surface of certain parts of the body. Beside for their own sake, the people in the rural areas also use to apply the traditional veterinary medicine for their livestock.

For the dairy farmers who are mostly found in Java island, it is not so difficult to find external help in case there is any problem with their cattle, because most of them have joined village dairy cooperatives which provide as a part of their services, modern veterinary care to their members. But for other farmers, especially, those who live in remote places, the veterinary services are not always easily available. In these areas, the farmers tends to treat their livestock first with their own knowledge on traditional veterinary medicine, especially if the disease problem is not so severe.

Since most farmers are small holding farmers who keep their livestock nearby their houses and sometimes even under the same roof, it is not difficult for them to observe any change of the normal habit or diseases of their livestock.

In fact, the traditional veterinary medicine, which consist of a mixture of herb, fruit, honey, eggs and other substances, is not only used for curing illness, but also for increasing their daily weight gain (for fattening cattle) and for increasing their condition or fighting spirit (for the racing bulls).

Based on questionnaires sent to the 27 Livestock Services, 7 Disease Investigation Centres and 5 Faculties of Veterinary Medicine throughout Indonesia, about 150 formulae of traditional veterinary medicine which were usually practised by the farmers have been received.

Although the formulae came from different places there is a similarity in using these same herbs for curing the same disease problems with variations in combining the ingredients.

In this text, the names of most herbs are described in the Indonesian language since it is difficult to find English name for them. But, their scientific names in Latin are always expressed in brackets.

II. DISEASE SYMPTOMS AND TREATMENTS

ANOREXIA

This obvious sign of loosing appetite is easily detected by the farmers because most livestock are hand-fed. The simple practice is by mixing salt with the grass or giving concentrates which consist of rice bran, corn, cassava, etc. This effort is practised if the livestock are getting thin and also for the purpose of fattening. The following are some typical examples for the treatment of anorexia practised in Indonesia:

1. Let the shark fish rotten until the fly larva comes and feed the larva to the cattle.

2. An edible nightshade (*Solanum malangana*) is barbequed and fed to the cattle.
3. Cook two bunches of a bananas in coconut milk, add brown sugar and salt and feed the porridge to the cattle.
4. Crush together the following ingredients:
 - temu ireng (*Curcuma aeruginosa* Rox.)
 - temu lawak (*Curcuma xanthoriza*)
 - saffron (*Curcuma domestica*)
 - lempuyang (*Zingiber aromatica*)
 - 10- 15 mengkuda fruits (*Morinda citrifolia* Linn.) and feed the mixture to the cattle once a month.
5. Mix several native chicken eggs and a bottle of ketchup (soya bean sauce) and feed the animal once a day.
6. Mix about 15 calladium leaves and 15 full spoons of salt and then cook. Afterward feed it to the animal once a day.
7. Crush together the following ingredients:
 - temu lawak 1 kg (*Curcuma xanthoriza*)
 - ripe tamarind 1 handful (*Tamarindus indica*)
 - saltcook and feed it to the cattle twice a day.
8. Mengkuda fruits (*Morinda citrifolia* Linn.) is fed to the animal daily until the appetite is resumed.
9. Squeeze rotten bananas trees and collect a glass of the liquid. This is to be given to the animal everyday. Sometimes, add a few drops of kayuputih (*Melaleuca leucadendra* Linn.) oil.
10. Mix brown sugar, ripe tamarind and eggs, and feed the mixture to the animal.
11. Mix extract of papaya leaves and eggs and feed it to the animal.
12. Grind the following ingredients:
 - yeast or ferment 10 g.
 - garlic 50 g.put on the grass or mix with water and give this mixture to the cattle twice a week.
13. Grind together lempuyang (*Zingiber aromatica*) with temu lawak (*Curcuma xanthoriza*) and then, cook and mix with ketchup (soya bean sauce) and give the mixture to the cattle once a month.
- 14'. Mix 200 of kencur (*Kampferia galanga*) with 3 eggs and feed it to the animal twice a day every 3 days.

15. For young growinct calves

- 3 duck eggs
- 1 young coconut meat
- 1 cup coconut water (liquid found inside the fruit)
- 3 spoonfulls of sugar

give the mixture to the calves once a week.

16. If it is accompanied by fever

- a. mix extract of capok (*Eriodendron anfructuosum*) leaves and eggs and feed it to the animal.
- b. mix extract of rambutan (*Nephelium lappaceum* L) leaves and eggs and feed it to the animal.
- c. mix coconut water and eggs and feed it to the animal.

17. Dissolve jarak leaves (*Jatropha curcas* Linn.) in saline solution in a clay pot and keep it for months. Give a spoonfull of the stuff to the cattle once a day. More water may be added, as necessary, to the clay pot.

18. For the treatment of simple indigestion

The farmer used to treat this kind of ailment by giving coffee drink, ginger drink or kencur (*Kamferia galanga*) drink.

DIARRHEA

The traditional method of stopping diarrhea is by giving "ampet-ampet" (a Javanese term for substance that could stop the diarrhea) which consists of the young leaves of jambu fruit (*Psidium guajava* Linn.), tea drink, a mixture of honey with saffron (*Curcuma domestica* Val.), rasped young jack fruit (*Artocarpus integrifolia*).

There are some other traditional formulae used to be practised in Indonesia dealing with diarrhea:

1. Barbeque cassava until it burnt and feed the animal.
2. Crush wood charcoal and feed to the animal.
3. Rasp these ingredients:
 - temu ireng (*Curcuma aeruginosa* Rox.)
 - saffron (*Curcuma domestica*)
 - kencur (*kampferia galanga*)
 - lempuyang (*Zingiber aromatica*)

and then mix with rotten, fermented soya bean cake (Indonesia: tempe). Wrap it up in a plastic sheet and leave it for a night. In the following day, press the mixture and make the cattle drink the liquid, three times a day within 2 consecutive days.

Crush together the following ingredients:

- ginger
- kencur (*Kampferia galanga*)
- saffron (*Curcuma domestica*)
- ripe tamarind

and put the mixture in a bottle and make the cattle drink it once a day.

5. Crush the following ingredients:

- lempuyang (*Zingiber aromatica*)
- 250 g. of sugar
- 10 litres of clean water

and make the cattle drink the stuff.

6. Rasp parts of banana tree which is in the ground and press. Mix the liquid with salt, eggs and raja bananas fruit (*Musa paradisiaca*). Feed to the cattle twice a day.

7. Burnt 5 areca-palm seeds (*Areca catechu* Linn.) and crush it finely, mix with 2 glasses of water and give it to the cattle once a day.

8. Burn ripe-seeded banana fruit (*Musa Brachycarpa*) and feed it to the animal.

9. Make the extract of the leaves of avocado, rambutan (*Nephelium lappaseum* Linn.) and capok (*Ceiba patendra* Gaertn.) and give it to the animal.

10. Boil a mixture of 5 g. sirih quid (lime) and a handful leaves of seeded jambu (*Psidium guajava* Linn.) in a one litre of water so that only half litre of water left and then filter it and give to the animal once a day for 3 days.

11. Mix the following ingredients:

- ripe tamarind seeds
- saffron (*Curcuma domestica*)
- extract of areca-palm seeds (*Areca catechu* Linn.)
- eggs

and give the mixture to the animal twice a day.

TYMPHANI BLOAT

Facing this problem the farmer makes the animal drink an oily mixture of coconut with aromatic oil or rasped ginger. In addition, the farmer warms the extended stomach by putting on it something hot such as rasped ginger. A stalk of papaya leaf may be inserted in their anus in order to let the gas out.

There are other formulas usually practised by the farmers e.g.:

1. Put 10 ripe tamarinds in a bucket of warm water, add brown sugar and 5 ground saffron (*Curcuma domestica*) and mix together evenly. The mixture is put in a bottle or bamboo shaft and forced to be drunk by the cattle. Keep the mouth open by inserting between the jaws a piece of wood.
2. Mix a bucket of coconut oil and green coconut water and make the cattle drink it.
3. Press the rotten banana tree and give 1/4 litre of the liquid to the animal.
4. Put on the surface of the extended stomach + sign with sirih-liquid (lime).
5. Make the cattle drink coffee with a glass of warm water.

Especially for goat and sheep

6. Make the goat drink brown sugar in a glass of warm water and put a piece of wood in the mouth to be bitten.
7. Crush sembukan leaves (*Saprosma arboreum* B1.) and then mix with used coconut oil and put it on the surface of the extended stomach twice a day. Repeat it the following day.

ANTIPYRETICA

The usual ingredients used for this purpose are a mixture of saffron (*Curcuma domestica*) and honey. The animal may be fed with papaya fruit as much as possible.

But there are some other formula for antipyretica treatment:

1. Mix pressed capok (*Eriodendron anfructuosum*) leaves and eggs, and give it to the cattle.
2. Press 300 g of capok (*Eriodendron anfructuosum*) leaves after putting water and then filter and mix with small quantity of salt and brown sugar, and make the cattle drink it twice a day every 2 days.
3. Mix pressed rambutan leaves (*Nephelium lappaceum* L.) and egg and give it to the cattle.
4. Mix coconut water and eggs and make the cattle drink it.
5. Make a homogenous solution of a mixture of crushed saffron (*Curcuma domestica*), eggs and water and make the cattle drink it.

ANTHELMINTIC

As has been widely known, the young as well as ripe areca palm seed (*Areca catechu*) is an effective anthelmintic especially against ascariasis, both for human and animal. Other well-known stuff is temu hitam or black temu (*Curcuma phaeocaulis* Val.) and papaya leaves. The farmers often make combination of those two stuff.

The usual practice is crushing the areca-palm seed and mix with water and make the animal drink the stuff. But there are some other formulas used by the farmers e.g.:

1. For treating calves: boil the green banana lontong (a part of banana flower which is not developed into fruit) and the rest of the water used as anthelmintic.
2. Crush the following ingredients:
 - 10 packs of yeast
 - 2 pieces of rotten fermented soya bean (tempe)
 - 1 handful of temu hitam (*Curcuma phaeocaulis* val.)
 - small quantity of jinten (*Nigella sativa* Linn.) and
 - brotowali (*Tinospora tuberculata* Beumee)

and then boil the mixture in 10 glasses of water. Filter and use it as anthelmintic every 3 weeks up till 3 months.

3. Garlic is also used as anthelmintic in some areas
4. A piece of gadung root (*Dioscorea hispida* Dinst.) is given to cattle every week until the worm comes out. This usually occurs after 4 times of treatment.
5. Rasp the following ingredients and mix:
 - temu hitam (*Curcuma phaeocaulis* Val.)
 - ripe coconut fruit

Dry the stuff and then give it to the cattle once a day.

WOUND, MYIASIS, PAPILLOMA, TICK, SCABIES, ORP AND CASCADO

Pressed sirih leaves (piper betle) are widely used as antiseptic to treat the wound. If the case has been developed into myiasis, a mixture of pressed tobacco leaves with water and sirih-quick (lime) is used. The practice used are:

1. Clean the wound, drop some commercial anti-fly liquid and put a mixture, of sirih-quick (lime) and saffron (*Curcuma domestica*).

2. Put tobacco which has been soaked in the water to the wound which has larva on it. Change the tobacco everyday.
3. In case there is suspected tumor or whatever enlargement in part of the body, it will be covered by sirih-quid (lime).
4. In case there is papilloma, it will be cut and the wound will be treated with a mixture of crushed mangkokan leaves (*Nothopanax scutellarium* Merr.) with shrimp jelly twice daily.
5. In case of panaritium or wound in the interdigital claw in ruminant, a mixture of alum, areca-palm (*Areca catechu*) and sirih-quid (lime) is put in the wound.
6. In case tick or scabies is found, the practice used are:
 - Wash the animal using water mix with young leaves of areca-palm (*Areca catechu*).
 - Put on the affected part of the body, a mixture of sulfur in a hot coconut oil.
 - Steam the animal with burnt sulfur with shell of coconut fruit.
7. After cleaning the wound, put on the myiasis site a mixture of a glass of lime, tobacco, gasoline or spiritus. After all the larvae have been out, close the wound with ash.
8. In case of scabies put to the affected part: crushed ketapang leaves (*Terminalia catappa* Linn.) until it is cured. In addition, give the animal a drink of the mixture consisting of ginger, brown sugar and salt.
9. Another, formula for scabies is to put to the affected part crushed galing leaves (*Mussaenda frondosa* Linn.) mixed with water or tobacco water (water after soaking tobacco in it).
10. In the case of scabies, scrub the affected parts with galing leaves (*Mussaenda frondosa*) and then apply with used oil and sulfur.
11. The affected part of scabies could also be scrapped by mengkudu fruit (*Morinda citrifolia* Linn.) and afterward put on the affected parts a mixture of used oil and kerosene.
12. Scabies could also be treated by applying to the affecting part, a mixture of crushed sulfur, camphor and used oil which is heated and cooled. Do this treatment twice daily within 3 days for complete healing.

13. In case of infestation of ticks in cattle, feed the cattle with barbequed gecko. Also drop the used motor-car battery acid to the ticks.
14. Orf (ichtyma contagiosa) may be treated by applying to the affected part a mixture of ash and coconut oil.
15. Cascado (stephanofilariasis) may be treated by applying crushed ketapang leaves (Cassia alata Linn.). Sometimes crushed ketapang leaves is mixed with sirih-quad (lime). The other formula is to mix 10 camphor and heated 1 litre of coconut oil to be applied topically to the affected parts.

INTOXICATION

In mild cases or when the case is early detected, recovery could be obtained by letting the animal drink ad libitum green coconut water or a glass of coconut oil. Sometimes ripe tamarind and salt are also added to the green coconut water and coconut oil. In case that insecticide is suspected as the cause of the intoxication, warm coconut milk is given.

MISCELLANEOUS

To change the colour of the skin

For Madura people who keep Madura breed cattle, it is very important that the colour of the skin of their cattle is red especially for bull which will be trained as racing bull (Indonesia: kerapan sapi).

Put 1/2 kg of brown sugar to 1 litre of coconut milk and boil until half litre is left. Then, cool it and let the cattle drink it every 2 days for 1 month.

To increase the stamina of the cattle

1. This practice is used to strengthen the muscle and to increase the stamina of the working cattle as well as the racing bull (in Madura).

Formula I.

Prepare the following ingredients:

- 10 kg of kunci (Gastrochilus panduratum Ridl.)
- 2 kg of ginger-root or lengkuwas (Alpina galanga Sw.)
- 5 ripe coconuts for making coconut milk
- 10 kg brown sugar
- 2 litres of water

Rasp the first two ingredients and mix with the others and then cook until the mixture becomes solid. Make balls in an egg-size from the solid stuff.

Formula II.

Mix 25 eggs and 1 1/2 litre of soda water. Give to the cattle 4 balls of formula I every 2 days while formula II is given every 2 weeks.

2. Crush temu ireng (*Curcuma aeruginosa* Rox.) and piper betle (*Charica auriculata*) stem, mix with water and squeeze the water. The water then is mixed with crushed kunci (*Gastrochilus panduratum* Ridl.). This mixture is given to the bull a day before the racing competition.

Weaning calf

For weaning calf, the udder is painted by crushed sambiroto leaves (*Adrographis paniculata* Mees.) 2 times a day for 4 days.

To increase the bull's libido

1. Mix the following ingredients:
 - 4 eggs of native chicken
 - 1/2 glass of ketchup (soya bean sauce)
 - 2 bundles of ginger which is cut into small pieces
 - 1 glass of water

and make the bull drink the stuff. Usually one dose is enough.

2. Mix the following ingredients:
 - 10 eggs
 - 1 large bottle of ketchup (soya bean sauce)
 - sugar and make the bull drink the stuff.

POST-PARTUM MASTITIS AND RETENTIO SECUNDINARIUM

To improve calving conditions, a cow is given an feed consisting of a mixture of yellow part of eggs (sometimes mix with local wine). The other formula (*Curcuma domestica*), brown sugar and eggs. Sometimes, saffron, ripe tamarind is used.
additional and honey is saffron instead of

To avoid mastitis, a mixture of ripe tamarind and salt is put on the udder. In case mastitis has been occurred, put on the affected udder a mixture of ripe tamarind and brown sugar and milk the cow up to 6 times a day.

To increase the flow of milk, the farmers use these formulas to their calving cows:

- i,
 - 1 kg saffron (*Curcuma domestica*)
 - 1/2 kg ripe tamarind
 - 10 eggs
 - salt
 - water

The mixture is given 4 times in a month.

2. Feed the cow with the end part of banana flower which is not developed into fruit (Indonesia: jantung pisang).
3. Feed the cow with the leaves and the root of sweet potato (*Ipomoea batatas*).

Sometimes the farmer gives a mixture of special formula to their cows which is combination treatment for indigestion, increasing the flow of milk, increasing appetite and as anthelmintic. Crush together the following ingredients:

- 1/2 kg of temulawak (*Curcuma xanthorrhiza* Roxb.)
- 1/4 kg of kunyit (*Curcuma domestica* Val.)
- 1/4 kg of temu ireng (*Curcuma aeruginosa* Rox.)
- 100 g of bluntas leaves (*Pluchea indica* Less.)
- 5 mengkudu fruit (*Morinda citrifolia* Linn.)
- 50 g of blimbing wuluh fruit (*Averhoa bilimbi* Linn.)

Then cook, and add salt and sugar. Make the cow drink the stuff and feed the rest.

In case placenta is retained (*retentio secundinarium*), the top of bamboo and the young bamboo leaves are fed 1-3 times a day until the placenta is removed out. In some cases the cow is put outside in the sunshine.

ANNEXES

3 LIST OF MEDICINAL PLANTS/HERBS AND THEIR VETERINARY USES IN INDONESIA

Local Name	English Name	Botanical Name	medical use
1. Adas	Fennel	Anethum foeniculum Linn.	Fruit: Used for cough, fever, stomachache, diarrhea and diuretic.
2. Alang-alang	Sedge grass	Imperata Cylendrica	Root: Diuretic.
3. Angsana	Angsenna tree	Pterocarpus indica Wild	Leaves: The withered young one used to cover wounds and inflammations.
4. Anyang-anyang		Elaeocarpus grandiflora J.Sm.	Seed: Diuretic.
5. Akar wudani		Quisqualis indica Linn.	Root and fruit: Anthelmintic. Leaves: Used to treat bloat.
6. Asam	Tamarind	Tamarindus indica	Fruit: Skin diseases and a mild laxant.
7. Aren (Enau)	Arenga palm	Arenga pinnata	Flower: Juices from tapped-cut end produce brown sugar, used as tonic and one of the ingredients for many traditional mixtures.
8. Bawang merah	Red onion	Allium cepa Linn.	Rhizome: Used as one of the ingredient for cough, fever and skin diseases.
9. Bawang putih	onion	Allium sativum Linn.	Rhizome: Anthelmintic.
10. Bambu	Bamboo tree	Bambusa bambos	Leaves: The top and the young one

			and the young one used to treat retentio secundarium.
11. Bakung		<i>Crinum asiaticum</i>	Rhizome: Antiemetic
12. Besar		<i>Morus australis</i> Poir.	Leaves: Antipyretic and skin diseases.
13. Belimbing		<i>Averrhoa bilimbi</i> Linn.	Flower and fruit: Cough. Leaves: Antipyretic.
14. Bidara Laut		<i>Eurycoma longifolia</i> Jack.	Leaves: Antipyretic.
15. Bidara upas		<i>Merremia mammosa</i>	Rhizome: Used to increase the milk flow and treating cough.
16. Bestru		<i>Plectronia horrida</i> Schum.	Leaves: Used to treat eye problem.
17. Brotowali		<i>Tinospora tuberculata</i> Beaume	Root and tree: Antipyretic. Leaves: To cover wounds.
18. Buah nona		<i>Anona reticulata</i> Linn.	Tree: the shell is used to treat diarrhea. Fruit: Anthelmintic.
19. Cengkeh	Clove tree	<i>Syzygium aromaticum</i> Linn.	Flower bud or clove oil: Toothache and to heat the body.
20. Daun serep		<i>Erythrina subumbrans</i> (Aassk) Merr.	Leaves: Antipyretic.
21. Daun dewa		<i>Gynura procumbens</i> Baker.	Leaves: Used as the ingredient to make a mixture to treat skin diseases.
22. Daun sendok		<i>Plantago major</i> Linn.	Leaves: Skin diseases.
23. Daun trawas		<i>Litsea odorifera</i> Val.	Leaves: Used to, increase the milk flow.
24. Delima Putih		<i>Punica granatum</i> Linn.	Tree and root: The shell is used as ingredient of

anthelmintic (taeniasis).
Flower: Used to treat lesion in the mouth.

25.	Dempol lelet		Glochidion molle B.I.	Leaves: Used as an ingredient of a mixture to treat skin disease.
26.	Duku		Lansium domesti- cum Coor.	Seed: Anthelmintic.
27.	Gambir		Uncaria gambir (Hunter) Roxb.	Leaves: Prepared into stuff with strong astringent properties, used as an ingredient of a mixture to treat stomachache, diarrhea and skin diseases.
28.	Garut		Marantha arundi- nacea Linn.	Rhizome: Diarrhea.
29.	Jahe	Ginger	Zingiber offi- ciale Rose.	Rhizome: Used to heat the body.
30.	Jambu biji	Guava	Psidium guajava Linn.	Root and Leaves: Diarrhea.
31.	Jambu mete	Cashew tree	Anacardium occi- dentale Linn.	Root: Laxant. Leaves: Skin diseases.
32.	Jarak	Castor oil plant	Ricinus communis Linn.	oil of the seed: Laxant.
33.	Jarak pagar		Jatropha curcas Linn.	leaves: Anthelmin- tic, cleaning wounds and skin diseases.
34.	Jengkol		Pithecolibium lobatum Beath.	Leaves: Used to treat wounds and skin diseases.

35.	Jeruk nipis Lemon	Lemon	<i>Citrus auranti- folia (Cristm.) Swingle.</i>	Fruit: Used as an ingredient of mix- tures to treat cough stomachache and skin diseases.
36.	Jeruk purut	Small aro- matic lemon	<i>Citrus hystrix DC.</i>	Leaves: To heat body.
37.	Jintan hitam	Ground cumin	<i>Nigella sativa Linn.</i>	Seed: Used as an ingredient of a mixture to treat stomachache.
38.	Katu		<i>Sauropus andro- gynus Merr.</i>	Leaves: To increase the milk flow.
39.	Kayu angin		<i>Usnea misaminensis (Vain.) Not.</i>	Shrub: Used as an ingredient of a mix- ture to treat cough.
40.	Kayu putih		<i>Melaleuca leuca- dendra Linn.</i>	Oil of the leaves: Cough and stomach ache.
41.	Kayu ules		<i>Helicteres isora Linn.</i>	Fruit: Stomachache
42.	Kecubung		<i>Datura metel Linn.</i>	Leaves: Skin diseases.
43.	Kedawung		<i>Parkia roxburghii</i> <u>Seed:</u> Stomachache G. Don.	
44.	Kelapa	Coconut tree	<i>Cocos nucifera Linn.</i>	Water: Intoxica- tion, diarrhea and fever. Oil: Intoxication, laxant and anthelmintic. Rhizome: Laxant
45.	Kelembak		<i>Rheum officinale Baill.</i>	Leaves: Anthelmin- tic.
46.	Kelor		<i>Sesbania sesban Linn.</i>	Leaves: Anthelmin- tic.
47.	Kemarogan		<i>Gymnopetalum leu- ticum Miq.</i>	Branches: Tonic, to increase the appetite.
48.	Kembang		<i>Hibiscus rosa-si- nensis Linn.</i>	Flower/leaves: Antipyretic.
49.	Kem landin-		<i>Laucaena glauca</i>	Seed: Anthelmintic.

gan		Benth.	
50. Kemukus		Piper cubeba Linn.	Fruit: To heat the body.
51. Kencur		<i>D Kaemferia galanga</i> Linn.	Rhizome: Skin diseases.
52. Kendal		<i>Cordia dichotoma</i> Farst.	Shell of the tree branches: Antipyretic.
53. Ketepeng cina		<i>Cassia alata</i> Linn.	Leaves: Laxant and skin diseases.
54. Ketela rambat sweet potato		<i>Ipomoea batatas</i> Poir.	Leaves: To cover wound.
55. Ketumbar	Coriander Seed	<i>Coriandrum sativum</i> Linn.	Seed: Stomachache,
56. Kumiskucing		<i>Orthosiphon stamineus</i> Benth.	Leaves: Diuretic.
57. Kunyit	Saffron	<i>Curcuma domestica</i> Val.	Rhizome: Stomachache, diarrhea, laxant and skin disease.
58. Labu		<i>Lagenaria leucantha</i> Rusby.	Fruit: Antipyretic.
59. Labu merah		<i>Cucurbita moschata</i> Duchesne.	Fruit: Mild laxant Seed: Anthelmintic.
60. Langkuas		<i>Languas galanga</i> (Linn.) Merr.	Rhizome: Skin diseases.
61. Lempuyang		<i>Zingiber americanum</i> Bl.	Rhizome: Stomachache.
62. Lempuyang gajah		<i>Zingiber zerumbet</i> J.Sm.	Rhizome: Skin diseases.
63. Lempuyang wangi		<i>Zingiber aromaticum</i> Val.	Rhizome: Stomachache.
64. Lobak		<i>Raphanus sativus</i> Linn.	Root: To increase milk flow and treating cough.
65. Manis Jangan	Cinnamon	<i>Cinnamomum speciosum</i>	Shell of the tree and Young leaves: Used as an ingre-

				dient of a mixture for treating cough.
66.	Meniran		Phyllanthus niruri Linn.	The whole plant: Diuretic.
67.	Mentimun	Cucumber	cucumis sativus Linn.	<u>Fruit</u> : Antipyretic.
68.	Merica bolong		Melaleuca leucadendra Linn.	<u>Fruit</u> : Used to treat stomachache.
69.	Nangka blanda		Ananas comosus Linn.	<u>Leaves</u> : To cover inflammations.
70.	Nangka	Jack fruit tree	Antocarpus integr Merr.	<u>Root</u> : Antipyretic.
71.	Otok-otok		Desmodium pulchellum Benth.	<u>Leaves</u> : Used to treat ulcers.
72.	Orang-aring		Pouzolzia zeylanica Bern.	<u>Leaves</u> : Boiled to increase milk flow.
73.	Oyod sowo		Vitis landuk Miq.	<u>Shrub</u> : Anthelmintic.
74.	Pare		Momordica charantia Linn.	<u>Leaves</u> : Anthelmintic.
75.	patikan cina		Euphorbia prostata Ait. and Euphorbia thymifolia Linn.	<u>The whole plant</u> : Stomachache.
76.	Pegagan		Centella asiatica (L.) Urban.	<u>The whole plant</u> : Used as an ingredient of mixtures for treating cough, fever and skin diseases.
77.	Papaya	Papaya fruit tree	Carica papaya Linn.	Root: Anthelmintic. Sticky plant-sap: Skin diseases.
78.	Petai		Parkia speciosa Hassk.	<u>Seed</u> : Anthelmintic.
79.	Peundeuy		Parkia biglogosa Benth.	<u>Seed</u> : Stomachache
80.	Pinang	Areca-palm tree	Areca catechu Linn.	<u>Fruit</u> : Skin diseases.
81.	Pisang	Banana tree	Musa paradisiaca	<u>Tree</u> : The inner part is used as an

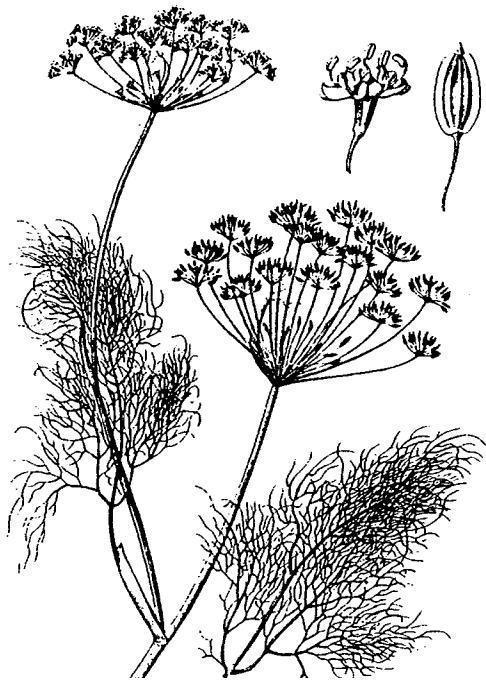
treating skin diseases.

82.	P1080		<i>Butea monosperma</i> Lamk. O.K.	<u>Leaves:</u> Skin diseases.
83.	Pohon merah		<i>Euphorbia pulcherrima</i> Wild.	<u>Sticky plant-sap:</u> Skin diseases.
84.	Poko		<i>Mentha aevenis</i> L.var <i>javanica</i> (B1.) Backer.	<u>Leaves _or the volatile oil:</u> Cough, and stomachache.
85.	Pulasari		<i>Alyxia spec.</i>	<u>Shell _of the tree:</u> Cough, fever, stomachache, diarrhea and diuretic.
86.	Purwaceng		<i>Pimpinella alpina</i> Kds.	<u>Root:</u> Diuretic and aphrodisiac.
87.	Randu	Kapook tree	<i>Erodendron anfractuosum</i> DC.	<u>Shell _of the tree:</u> Used to treat wounds, and diuretic.
88.	Remujung (kumis kucing)		<i>Orthosiphon gran-</i>	<u>Leaves:</u> Diuretic.
89.	Saga		<i>Abrus precatorius</i> Linn.	<u>Leaves:</u> Cough
90.	Salada air		<i>Nasturtium officinale</i> (L.) R.Br.	<u>The whole plant:</u> Diuretic.
91.	Sambiloto		<i>Andrographis paniculata</i> Nees.	<u>Leaves:</u> Antipyretic and skin diseases.
92.	Sembukan		<i>Paederia foetida</i> Linn.	<u>Leaves:</u> Used as an ingredient of a mixture for treating stomachache.
93.	Sembung		<i>Blumea balsamifera</i> (L.) DC:	<u>Leaves:</u> Stomachache.
94.	Sidaguri		<i>Sida rhombifolia</i> Linn. and <i>Sida retusa</i> Linn.	<u>Leaves:</u> Skin Diseases.
95.	Sirih		<i>Piper betle</i> Linn.	<u>Leaves:</u> Skin Diseases.
96.	Sosor bebek		<i>Kalnhoe pinnata</i> (Lamk.)Pers.	<u>Leaves:</u> Antipyretic.
97.	Suket	Dondoman	<i>Andropogon acicu-</i>	<u>Root:</u> Boiled it to

	dondoman	grass	Retz.	treat intoxication.
98.	Suket jareman	Jareman grass	Desmodium hetero- phyllum DC.	Leaves: Used as to- pical dressing for inflammation and ear problem.
99.	Sumarang		Rauwalfia javani- K & W	Leaves: To treat wounds.
100.	Suri pandak		Viola Patrinii DC	Leaves: Crushed, used as topical dressing for wounds.
101.	Tembakau	Tobacco	Nicotiana tobacum Linn.	Leaves: As tobacco used to treat wounds.
102.	Tembelekan		Lantana camara Linn.	Leaves: Skin diseases.
103.	Temugiring		Curcuma heyneana Val & V.Zijp.	Rhizome: Stomach ache.
104.	Temu hitam		Curcuma aeruginosa Roxb.	Rhizome: Used as ingredient of a mix- ture to increase the appetite.
105.	Temulawak		Curcuma xanthor- rhiza Roxb.	Rhizome: Skin diseases.
106.	Trengguli		Cassia fistula Linn.	Fruit: Mild laxant Root: Skin diseases.

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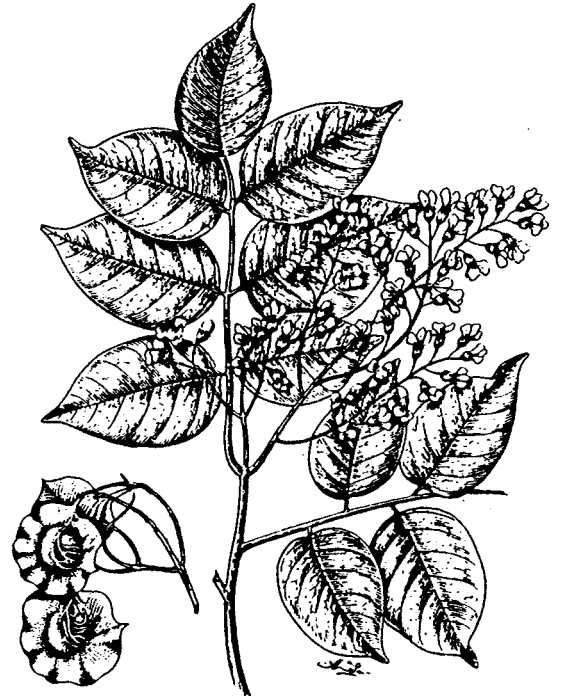


v

Adas

Fennel

Anethum foeniculum
Linn.



Angsana

Angsenna tree

Pterocarpus indica
Wild



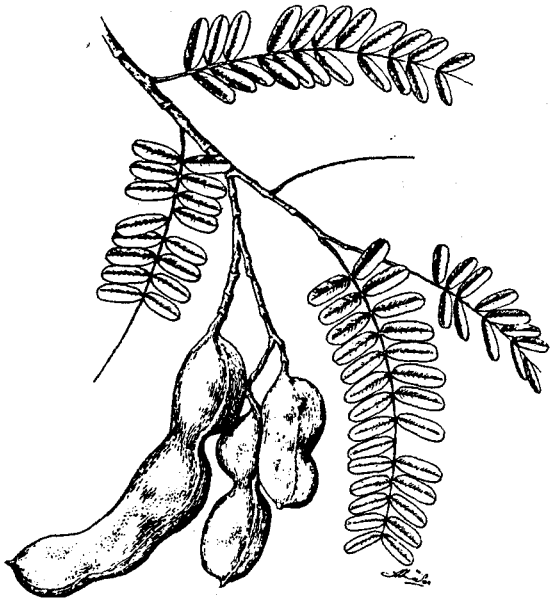
Anyang-anyang

Elaeocarpus
grandiflora
J.Sm.



Akar wudani

Quisqualis indica
Linn.



Asam

Tamarind

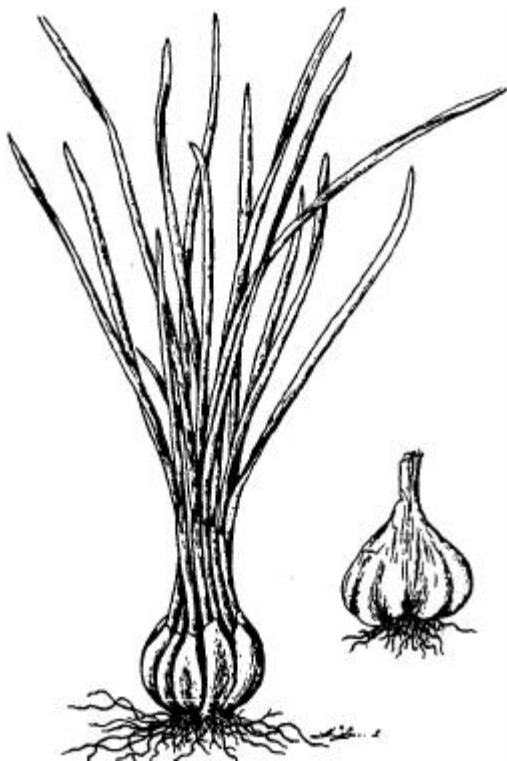
Tamarindus indica



3awang merah

Red onion

Allium cepa Linn.



Bawang putih

Onion

Allium sativum
Linn.



Besaran

Morus australis
Poir.



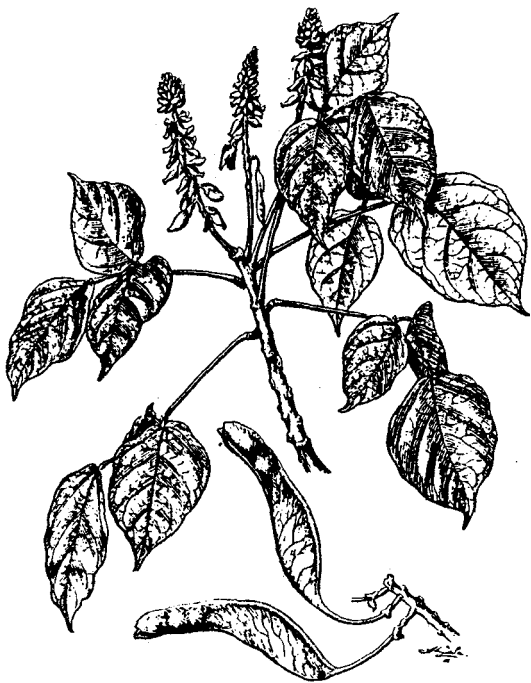
Belimbing

Averrhoa bilimbi
Linn.



Srotowali

Tinospora tuberculata
Beaume



Daun serep

Erythrina subumbrans
(Hassk) Herr.



Daun dewa

Gynura procumbens
Baker.



Daun sendok

Plantago major
Linn.



Daun trawas.

Litsea odorifera
Val.



Delima Putih

Punica granatum
Linn.



Dempol Islet

Glochidion mollis
B.I.



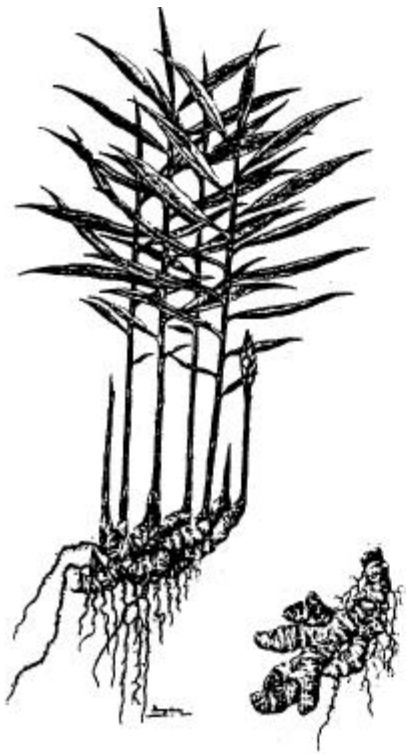
Gambir

Uncaria gambir
(Hunter) Roxb.



Garut

Marantha arundinacea Linn.



Jahe

Ginger

Zingiber officinale Rose.



Jambu biji

Guava

Psidium guajava Linn.



Jarak

castor oil
plant

Ricinus communis
Linn.



Jarak pagar

Jatropha curcas
Linn.



Jeruk nipis
Len .

Lemon

*Citrus auranti-
folia* (Cristm.)
Swingle.



Jeruk purut

Small aro-
matic lemon

Citrus hystrix
DC.



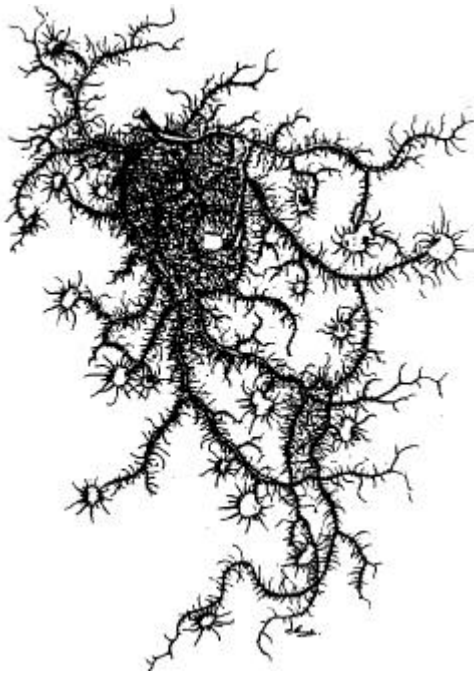
Jintan hitam Ground cumin

Nigella sativa
Linn.



Katu

Bauhinia purpurea
Herr.



Kayu angin

Usnea misaminensis
(Vain.) Not.



Kayu putih

Melaleuca leucadendra
Linn.



Rayu ulea

Helicterea isora
Linn.



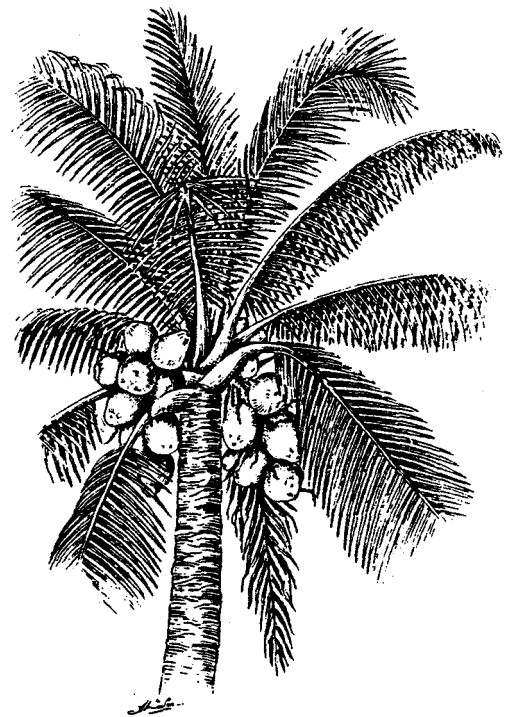
Kecubung

Datura metel
Linn.



Kedawung

Parkia roxburghii
G. Don.



Kelapa

Coconut tree

Coccoloba nucifera
Linn.



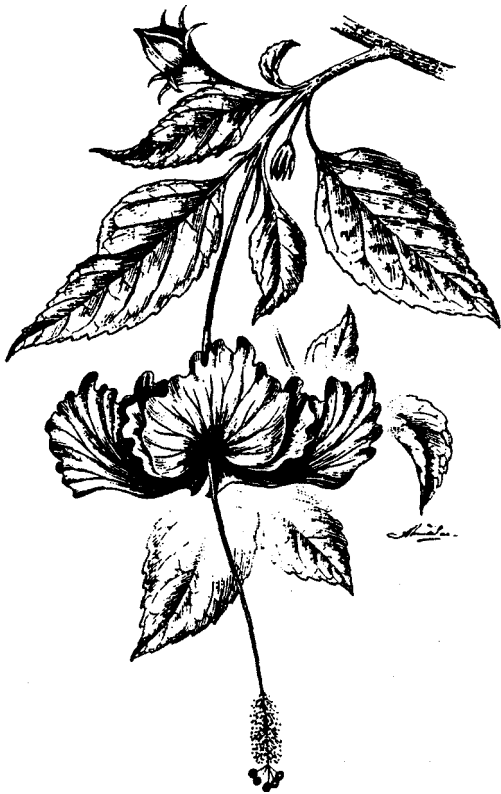
Kelembak

Rheum officinale
Baill.



Kemarogan

Gymnopetalum leucitum
Miq.



Kembang

Hibiscus rosa-si-



Kemuk

Piper cubeba
Linn.



Kencur

Kaempferia galanga
Linn.



Kendal

Cordia dichotoma
Farst.



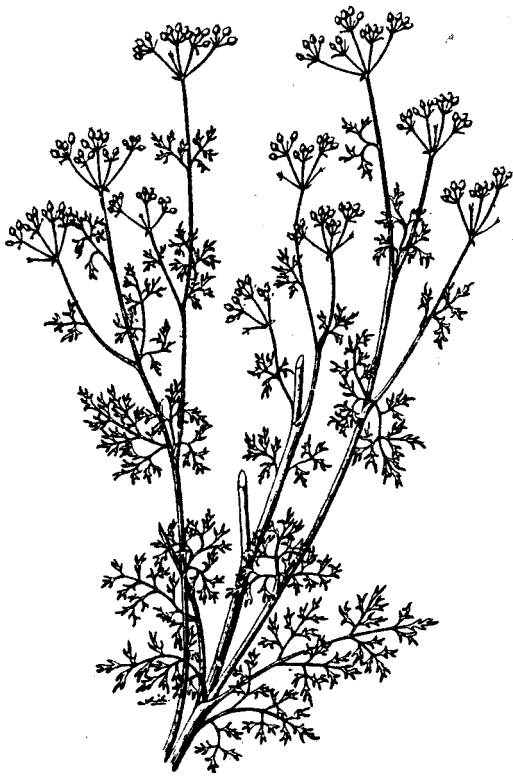
Ketepeng cina

Cassia alata Linn.



Ketela rambat sweet potato

Ipomoea batatas
Poir.



Ketumbar

Coriander
Seed

Coriandrum sati-
Linn.



Kumiskucing

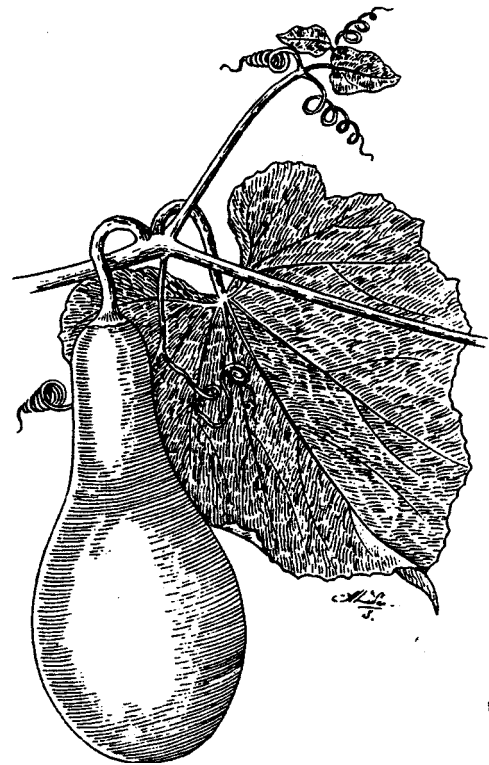
Orthosiphon sta-
mineus Benth.



Kunyit

Saffron

Curcuma domestica
Val.



Labu

Lagenaria leucan-
tha Rusby.



Labu merah

Cucurbita moschata
Duchesne.



Langkuas

Languas galanga
(Linn.) Merr.



Lempuyang

Zingiber americanum
Bl.



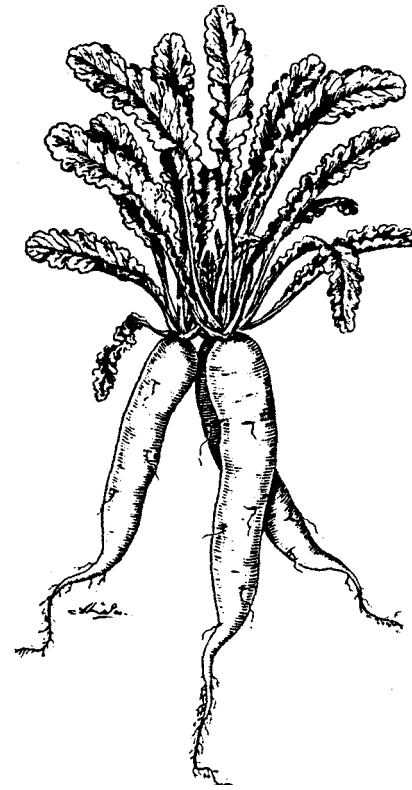
Lempuyang
gajah

Zingiber zerumbet
J.Sm.



Lempuyang wangi

Zingiber aromaticum Val.



Lobak

Raphanus sativus Linn.



Mania Jangan

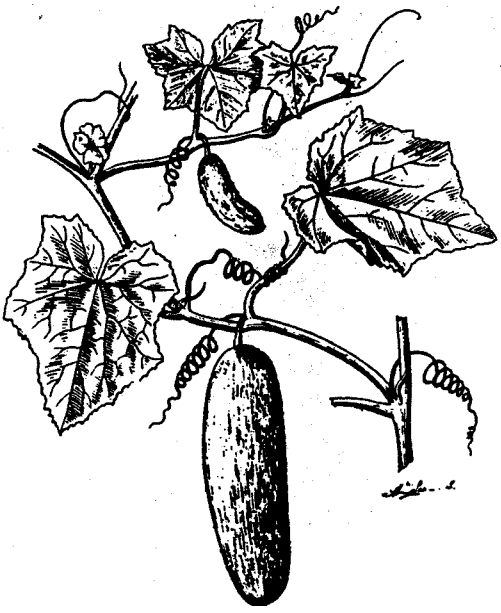
Cinnamon

Cinnamomum speciosum



Meniran

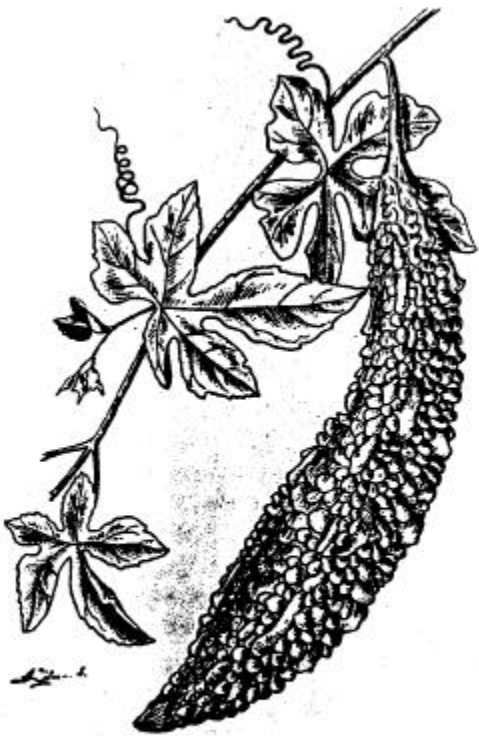
Phyllanthus niruri



Mentimun cucumber *Cucumis sativus*
Linn.



Merica
bolong *Melaleuca leuca-*
*dendra*Linn.



Pare

Momordica charan-
tia Linn.

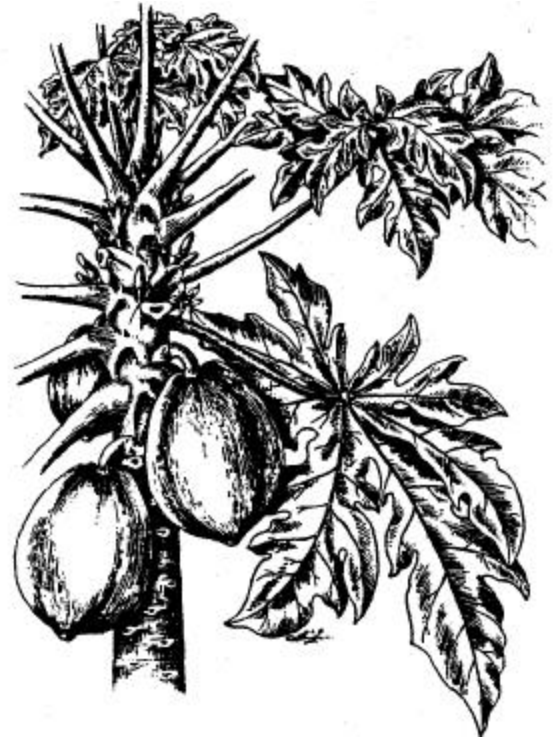


patikan cina *Euphorbia prostata*
Ait. and *Euphorbia*
thymifolia Linn.



Pegagan

Centella asiatica (L.)
Urban.



Papaya

Papaya fruit
tree

Carica papaya
Linn.



Pinang

Areca-palm
tree

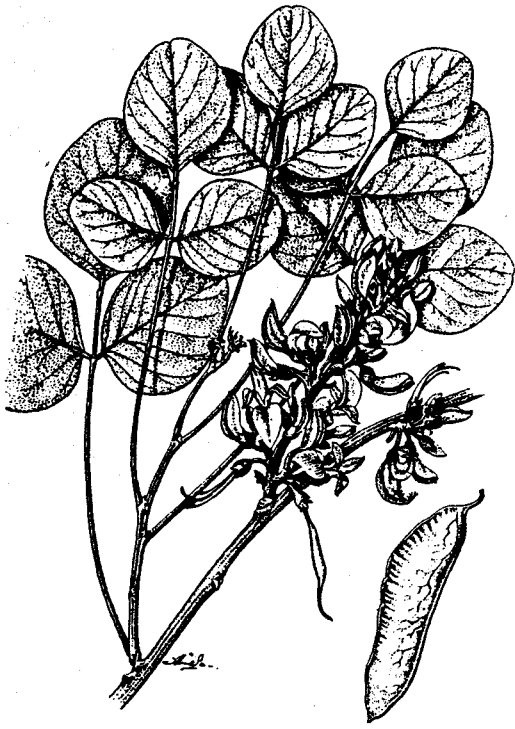
Azeca catechu
Linn.



Pisang

Banana tree

Musa paradisiaca



Ploso

Butea monosperma
Lamk. O.K.



pohon merah

Euphorbia pulcherrima Wild.



Poko

Mentha sevenis
L. var *javanica*
(Bl.) Backer.



pulasari

Alyxia spec.



Saga

Abrus precatorius
Linn.



Salada air

Nasturtium officinale
(L.) R.Br.



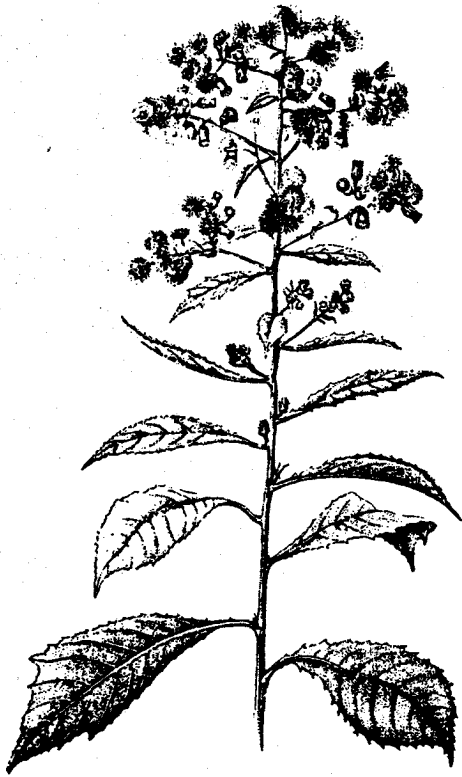
Sambiloto

Andrographis pani-
culata Nees.



Sembukan

Paederia foetida
Linn.



Sembung

Blumea balsamifera (L.) DC.



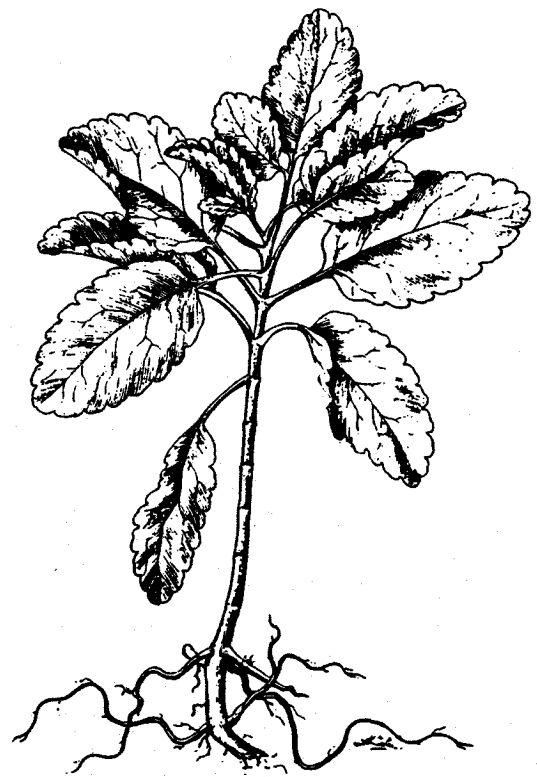
Sidaguri

Sida rhombifolia Linn. and *Sida retuea* Linn.



Sirih

Piper betle Linn.



Sosor bebek

Kalnchoe pinnata (Lamk.) Pers.



Tembakau

Tobacco

Nicotiana glauca
Linn.



Tembelekan

Lantana camara
Linn.



Temuiring

Curcuma hejneana



Temu hitam

Curci
Curcuma aeruginosa



Temulawak

Curcuma xanthorrhiza Roxb.



Trengguli

Cassia fistula Linn.